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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/692,865

10/27/2003

Toshihito Yanashima

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7590

02/10/2006

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP  
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WASHINGTON, DC 20006

EXAMINER

NGUYEN, HANH N

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/692,865	YANASHIMA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Nguyen N. Hanh	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Remarks***

1. In view of amendments, the Examiner withdraws the objection to the drawings with reference to Fig. 30. However, Applicant's argument necessitated new ground of objection.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features "a permanent magnet embedded in the rotor yoke which does not have a length radially disposed; and secondary permanent magnets each having an arcuate shape curving around the rotating shaft" must be shown or the feature canceled from the claims 16-18. It is noted that none of the Figure of the present invention show two kind of permanent magnet in which the secondary magnet having an arcuate shape curving around the rotating shaft. Only Fig. 42 shows one kind of permanent magnet having an arcuate shape curving around the rotating shaft. In lights of the drawings and the specification, the Examiners interprets the feature recited in claims 16-18 as readable to Fig. 30 of the present invention

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kapadia (US Patent No. 4,568,846).

Regarding claim 7-9, Kapadia discloses a synchronous induction motor comprising: a stator (Fig. 9) equipped with a stator winding; a rotor (60) which is secured to a rotating shaft (16) and which rotates in the stator; a secondary conductor (67) provided around the rotor yoke constituting the rotor; and a permanent magnet (41) embedded in the rotor yoke, wherein no portion of a magnetic field produced by the permanent magnet passes through the rotating shaft (wherein a magnetic field

produced by the permanent magnet entirely bypass the rotating shaft as in claim 8 or passes through only the rotor yoke, and no portion of the magnetic field passes through the rotating shaft as in claim 9), and wherein at least one void (66) is located in the rotor yoke between the permanent magnet and the rotating shaft (Fig. 9).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10-12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito et al. (US 6,555,940 B2) in view of Liu et al. (US 4,358,696).

Regarding claims 10-12, Naito et al. disclose a synchronous induction motor (preamble, patentable weight not given) comprising: a stator (Col. 2, line 25) equipped with a stator winding; a rotor (10 in Fig. 11) which is secured to a rotating shaft (Col. 6, lines 10-12) and which rotates in the stator; a permanent magnet (in slits 12B) embedded in the rotor yoke which does not have a length radially disposed; and secondary permanent magnets (in slits 12C of Fig. 11) each having a linear shape and provided symmetrically about a line that connects two magnetic poles, wherein the secondary permanent magnets have lengths which are radially disposed, and wherein the secondary magnets are substantially adjacent to the rotating shaft, wherein a magnetic field (as shown in Fig. 2) produced by the permanent magnet does not pass through the rotating shaft (or bypass the rotating shaft as in claim 11, or passes through

only the rotor yoke, excluding the rotating shaft as in claim 12). Naito et al. fail to show a secondary conductor provided around the rotor yoke constituting the rotor.

However, Liu et al. disclose a synchronous induction motor wherein a secondary conductor provided around the rotor yoke constituting the rotor for the purpose of improving motor performance characteristics.

Since Naito et al. and Liu et al. are in the same field of endeavor, the purpose disclosed by Liu et al. would have been recognized in the pertinent art of Naito et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Naito et al. by using a secondary conductor provided around the rotor yoke constituting the rotor as taught by Naito et al. for the purpose of improving motor performance characteristics.

Regarding claims 16-18, it noted that all limitations of the claimed invention have been fulfilled by Naito et al. and Liu et al. as in claims 10-12.

5. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kapadia in view of Narita et al.

Regarding claims 13-15, Kapadia shows all limitations of the claimed invention except showing the synchronous induction motor wherein said at least one void has a shape of an arc of a circle.

However, Narita et al. disclose a permanent magnet rotor wherein at least one void (13a in Fig. 15) has a shape of an arc of a circle for the purpose of preventing short-circuiting and leaking of the magnetic flux.

Since Kapadia and Narita et al. are in the same field of endeavor, the purpose disclosed by Narita et al. would have been recognized in the pertinent art of Kapadia.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Kapadia by forming the void with an arc shape of a circle as taught by Narita et al. for the purpose of preventing short-circuiting and leaking of the magnetic flux.

### ***Response to Arguments***

6. Applicant's arguments filed on 11/21/2005 have been fully considered but they are not persuasive.

Regarding claims 7-9, the applicant's argument is on the ground that "non of the cited references teaches, mentions or suggest that no portion of the magnetic passes through the rotating shaft as recited in the claims". The Examiner respectfully disagrees with the Applicant because Fig. 9 of Kapadia and Fig. 2 of Liu et al. clearly show no portion of the magnetic passes through the rotating shaft as recited in the claims

Regarding claims 10-12, the applicant's argument is on the ground that "Liu et al. and Naito et al. fail to teach, mentioned or suggest the linear or arcuate shape of the secondary magnet". The Examiner respectfully disagrees with the Applicant because Fig. 11 of Naito et al. clearly show the linear shape of the secondary magnet (in slits 12c).

Regarding claims 16-18, Applicant's disclosure (drawings and specification) fail to show "a (first) permanent magnet embedded in the rotor yoke which does not have a length radially disposed; and secondary permanent magnet each having an arcuate

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shape curving around the rotating shaft...". As previously discussed in the objection to the drawings, only Fig. 42 of the present invention show one kind of permanent magnet each having an arcuate shape curving around the rotating shaft". Therefore, the Examiner interprets the limitations as readable to Fig. 30 of the present invention and all the limitations of claim 16-18 have been fulfilled by Naito et al. and Liu et al. For the reasons explained above, the rejection is still deemed proper.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Information on How to Contact USPTO***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (571) 272-2031. The examiner can normally be reached on Monday through Friday.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg, can be reached on (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HNN

February 3, 2006

  
DARREN SCHUBERG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2000



U.S. SER. NO. 10/692,865  
Inventor: Toshihito YANASHIMA et al.  
Docket No.: 020265A  
REPLACEMENT SHEET

Approved by Examiner  
HNN  
2/3/06

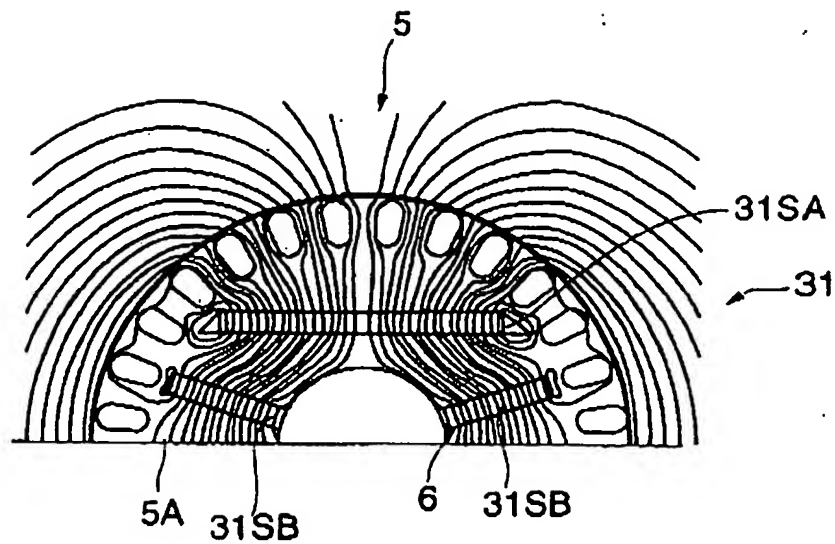


FIG. 30